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Ranking of Indian Institutions in Global and Indian Ranking system: A Comparative Study

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Abstract

The Times Higher Education publishes university rankings to assess university performance on the global stage every year. The data were retrieved from the Times Higher Education (THE) World University Rankings and National Institutional Ranking Framework (NIRF) website. The author has taken only the top 25 ranked Indian institutions from Times Higher Education World University Rankings 2021 for the study. It is compared ~~to~~ with National Institutional Ranking Framework (NIRF). The objectives of the study are to analyse both THE and NIRF ranking of top 25 Indian institutions. Further, it compares the Teaching and Research parameters, Research Performance explicitly and also with Research gate. It is found that "Indian Institute of Science" has got highest 301–350th rank from THE ranking and received 84.18 score from NIRF and placed 2nd rank in NIRF list. It is also found that "Indian Institute of Science" has the highest 58.1 score received from THE's and 82.22 score obtained from NIRF in Teaching. It is also found that "Indian Institute of Science" has the highest 53.1 score received from THE's and 92.16 score received from NIRF in the parameter of research.

Keywords: *Ranking, Institutional Ranking, Times Higher Education (THE) World University Ranking, National Institutional Ranking Framework (NIRF), Comparative Analysis.*

1. Introduction

The competition, an inevitable process in the academic domain, forces to compare the performances of higher educational institutions either at the global or national level. These are all happened because of the enormous technological Institutional and cultural changes. These

changes are improving the leading universities in the various countries which are actively involved in these competitions. Now a day's University ranking is an important, regular feature in higher learning academic institutions. The institutions are ranking based on geographically classified into three types such as global, national and regional rankings. The major international rankings are QS World University Ranking, Academic Ranking of World Universities, Times Higher Education World University Rankings, etc. The most popular ranking systems were shown in Table 1

Table 1. The top nine most popular and reputable Universities Rankings system

Global Ranking System⁽¹⁾	Indian Ranking System⁽¹¹⁾
1. Academic Ranking of World Universities (ARWU) (2003–) ⁽²⁾	1. The National Institutional Ranking Framework (NIRF) ⁽¹²⁾
2. National Taiwan University Ranking (NTU) (2007–) ⁽³⁾	2. Atal Ranking Of Institutions On Innovation Achievements (ARIIA) ⁽¹³⁾
3. Quacquarelli Symonds (QS) (2010–) ⁽⁴⁾	3. <i>India Today Group-MDRA Survey,</i>
4. SCImago Institution Rankings (SIR) (2009–) ⁽⁵⁾	4. <i>Outlook,</i>
5. Round University Ranking (RUR) (2010–) ⁽⁶⁾	5. <i>Mint,</i>
6. Times Higher Education (THE) (2011–) ⁽⁷⁾	6. <i>The Week,</i>
7. Center for World University Rankings (CWUR) (2012–) ⁽⁸⁾	7. <i>Dataquest,</i>
8. CWTS Leiden Ranking (LR) (2012–) ⁽⁹⁾ and	8. <i>Careers360 and</i>
9. Worldwide Professional University Ranking (RankPRO) (2014–) ⁽¹⁰⁾ .	9. <i>Electronics For You</i>

Among the nine ranking systems, the global ranking systems, namely Times Higher Education and Indian ranking system, namely National Institutional Ranking Framework (NIRF) were adopted in Indian universities to compare the performance of universities. The coverage of ranking considered as institutional research performance, teaching methods and learning process, funding projects, awards, expertise, national and international student's ratio, School/ Department/ centre activities of research and teaching. In different ranking generally evaluate institutional output by research. Some of the rankings evaluate institutions within a single

country, while others assess institutions worldwide. These kind rankings are very much helpful to frame policy implications of research for universities. Karran, T., & Mallinson, L (2019)⁽¹⁴⁾

1.1 Times Higher Education's Rankings

Times Higher Education creates university rankings to assess university performance on the global stage and to provide a resource for readers to understand the different missions and successes of higher education institutions. THE's rankings cover the three main missions of university activity: research, teaching and impact⁽¹⁵⁾.

1.1.1 Research rankings

The 'THE' World University Rankings founded in 2004 and 13 performance indicators, covering the full range of a top university's essential areas of activity: teaching, research, knowledge transfer and international outlook. THE World University Rankings receives the publication and citations data from (from Elsevier's Scopus database). In last year THE World University Rankings analysed 86 million citations to 13.6 million academic publications (from Elsevier's Scopus database) published over a five-year period between 2015 and 2019. The THE World University Rankings have other major rankings are Asia University Rankings, World Reputation Rankings, Young University Rankings, Emerging Economies Rankings and Latin America Rankings.

1.1.2 Impact Rankings

THE World University Rankings launched first Impact Rankings in 2019 and covered four broad areas: research, outreach, stewardship and teaching.

1.1.3 Teaching rankings

In 2015, THE World University Rankings launched Teaching Rankings. These rankings give students and their families the information they need to help them choose where to study, and have a survey of current students at their heart. The overall methodology explores four key areas: resources, engagement, outcomes and environment.

1.2 National Institutional Ranking Framework (NIRF)

In India, a new initiative developed at the national level for the educational ranking system called The National Institutional Ranking Framework (NIRF). It was approved by the MHRD, and it was also launched on 29th September 2015. The NIRF has four parameters broadly cover "Teaching, Learning and Resources," "Research and Professional Practices," "Graduation Outcomes," "Outreach and Inclusivity," and "Perception". Indian Rankings 2020 released on 11th June 2020⁽¹⁶⁾

1.3 Methodology of Ranking in THE and NIRF

The ranking methodology adopted in these two ranking systems was shown in Table 2.

Table 2. The methodology of two ranking systems

Times Higher Education World University Rankings (International)⁽¹⁷⁾	National Institutional Ranking Framework (India)⁽¹⁸⁾
1. Teaching (the learning environment): 30% <ul style="list-style-type: none">➤ Reputation survey: 15%➤ Staff-to-student ratio: 4.5%➤ Doctorate-to-bachelor's ratio: 2.25%➤ Doctorates-awarded-to-academic-staff ratio: 6%➤ Institutional income: 2.25%	Teaching, Learning & Resources (TLR) Ranking weight: 0.30 <ul style="list-style-type: none">➤ Student Strength including Doctoral Students(SS): 20 Marks➤ Faculty-student ratio with emphasis on permanent faculty (FSR): 30 marks➤ Combined metric for Faculty with PhD (or equivalent) and➤ Experience (FQE): 20 marks➤ D. Financial Resources and their Utilisation (FRU): 30 Marks
2. Research (volume, income and reputation):30% <ul style="list-style-type: none">➤ Reputation survey: 18%➤ Research income: 6%➤ Research productivity: 6%	Research and Professional Practice (RP) Ranking weight: 0.30 <ul style="list-style-type: none">➤ Combined metric for Quality of Publications (QP): 40 marks➤ Combined metric for Publications (PU): 30 marks➤ IPR and Patents: Filed, Published, Granted and Licensed (IPR): 15 marks➤ Footprint of Projects, Professional Practice and Executive Development Programs (FPPP): 15 marks

3. Citations(research influence): 30%	Graduation Outcomes (GO) Ranking weight: 0.20 <ul style="list-style-type: none"> ➤ Combined metric for Placement, Higher Studies, and Entrepreneurship (GPHE): 40 marks ➤ Metric for University Examinations(GUE): 15 marks ➤ Median Salary(GMS): 20 marks ➤ Metric for Graduating Students Admitted Into Top Universities (GTOP): 15 marks ➤ Metric for Number of PhD. Students Graduated (GPHD): 10 marks
4. International outlook (staff, students, research): 7.5% <ul style="list-style-type: none"> ➤ Proportion of international students: 2.5% ➤ Proportion of international staff: 2.5% ➤ International collaboration: 2.5% 	Outreach and Inclusivity (OI) Ranking weight: 0.10 <ul style="list-style-type: none"> ➤ Per cent Students from other states/countries (Region Diversity RD): 30 marks ➤ Percentage of Women (Women Diversity WD): 25 mark ➤ Economically and Socially Challenged Students (ESCS): 25 marks ➤ Facilities for Physically Challenged Students (PCS): 20 marks
5. Industry income (knowledge transfer): 2.5%	Perception (PR) Ranking weight: 0.10 <ul style="list-style-type: none"> ➤ Peer Perception: Employers and Research Investors (PREMP): 25 marks ➤ Peer Perception: Academic Peers(PRACD): 25 marks ➤ Public Perception (PRPUB): 25 marks ➤ D. Competitiveness (PRCMP): 25 marks

2. Review of Literature

Alma (2016)⁽¹⁹⁾ analysed the Increasing competition and need for competitiveness as a result of globalization, knowledge based economy and growing interest of information related to higher education institutions due to increasing mobility of people all served for the remarkable

popularity of ranking systems. Mukherjee (2017)⁽²⁰⁾ analysed through Research and Professional Practices of National Institutional Ranking Framework. Brahma and Verma (2019)⁽²¹⁾ evaluated the Selected Universities Library Websites Listed by National Institutional Ranking Framework (NIRF) during the Year 2017. Moed (2017)⁽²²⁾ compared five international ranking systems such as ARWU, Leiden, THE, QS and U-Multirank. It is necessary for comparing different systems; more insight is provided into how their institutional coverage, rating methods, the selection of indicators and their normalisations influence the ranking positions of given institutions. Mahendra Gowda (2020)⁽²³⁾ described three Indian National important measures, namely NBA accreditation, NAAC accreditation and NIRF ranking. To improve the quality for achieving fame and recognition at the national level. Mathew & Cherukodan (2018)⁽²⁴⁾ examined the relationship between scholarly output and institutional ranking based on National Institutional Ranking Framework (NIRF) of India. The data were collected from the websites of NIRF, Times Higher Education World University Rankings and QS World University rankings. The study found that these parameters fixed for the assessment of Indian institutions under NIRF are on par with those of other world university ranking agencies. The scholarly output of a university is one of the major parameters of university ranking schemes. Indian universities who scored high for research productivity came top in NIRF. These universities were also figured in world university rankings. Universities from South India excel in NIRF, and there is a close relationship between scholarly productivity and institutional ranking. Correlation between h-index and scholarly productivity has been dealt with in several studies. This paper is the first attempt to find the relationship between scholarly productivity and ranking of universities in India based on NIRF. Panneerselvam (2019)⁽²⁵⁾ discussed the National Institutional Ranking Framework and the performance of India's premier institutions, Indian Institute of Technology in the rankings. Abhishek Kumar, Sanjay Tiwari, Ashish Kumar Chauhan & Ramswaroop Ahirwar (2019)⁽²⁶⁾ investigated the growth of publication in the different subject category as well as the impact of growth before and after NIRF. Tamizhchelvan and Gopalakrishnan (2020)⁽²⁷⁾ analysed the ranking of SCImago Journal and Country Rank. It compared with h-index, citations, self-citations of journals. The publications in library and information science from Asiatic and SAARC countries are listed with h-index, citations and so on. Over 54 million documents are available in the database. The top three countries are United States, China and the United Kingdom. The study found that ranking varies based on different parameters. Kumar & Yadav (2020)⁽²⁸⁾ evaluated the contents and services of top ten NIRF

ranked university library portals and score them in the classes of Excellent, Good, Average and Poor. Srimathi and Krishnamoorthy (2020)⁽²⁹⁾ reviewed the NIRF and made expected improvements on various parameters.

3. Objectives of the Study

These are the major objectives of this study.

1. To identify the top 25 Indian institutions ranking in Times Higher Education World University Rankings 2021 and NIRF.
2. To analyse the THE World University Ranking and NIRF Score.
3. To compare the Teaching and Research parameters in THE Ranking and NIRF.
4. To compare Researchgate RG scores between the THE Ranking Score and NIRF score.

4. Research Methodology

The data were collected from Times Higher Education World University Rankings (https://www.timeshighereducation.com/world-university-rankings/2021/world-ranking#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/scores)⁽³⁰⁾ and National Institutional Ranking Framework website (<https://www.nirfindia.org/Home>)⁽³¹⁾ as on 21st October 2020. The current year 2021 of the ranking of higher educational institutions released by the The Times Higher Education World University Rankings on 2nd September 2020. Based on the data researcher has selected the top 25 Indian institutions only for this study and compare the parameters and score in National Institutional Ranking Framework (NIRF). The study also aimed to analyse top 25 Indian institutions ranking in T H E World University Ranking and NIRF, top 25 institution World University ranking score and NIRF score, comparative analysis of Teaching and Research in THE World University Ranking and NIRF, top 25 institutions research performance in researchgate.

5. Data Analysis and Interpretation

5.1 Indian Institutions Ranked in the THE's Ranking

The top 25 Indian Institutions has been presented in table 3 with Name of the institute, Location, Abbreviated, Year of establishment, THE rankings and NIRF ranks.

Table 3. The top 25 Indian Institutions Ranked in the THE's Ranking

S. No	Name of the Institute	Abbreviation	Location	Year of Establishment	THE's Ranking	R	NIRF Score	NIRF rank
1	Indian Institute of Science	IISc	Bangalore	1909	301–350 th	1	84.18	2
2	Indian Institute of Technology Ropar	IIT-R	Punjab	2008	351–400 th	2	50.92	39
3	Indian Institute of Technology	IIT-I	Indore	2009	401–500 th	3	55.94	23
4	Banaras Hindu University	BHU	Varanasi	1916	601–800 th	4	62.03	10
5	Institute of Chemical Technology	ICT-B	Mumbai	1994	601–800 th	4	51.7	34
6	University of Delhi	UD	Delhi	1948	601–800 th	4	58.97	18
7	Indian Institute of Science Education and Research	IISER-P	Pune	2006	601–800 th	4	55.43	25
8	Indian Institute of Science Education and Research	IISER-K	Kolkata	2006	601–800 th	4	53.49	29
9	Indian Institute of Technology	IIT-G	Gandhinagar	2008	601–800 th	4	51.49	35
10	Indian Institute of Technology	IIT-H	Hyderabad	2008	601–800 th	4	59.59	17
11	Indraprastha Institute of Information Technology	IIIT	Delhi	2008	601–800 th	4	-	-
12	Jamia Millia Islamia	JMI	New Delhi,	1920	601–800 th	4	59.85	16
13	Jawaharlal Nehru University	JNU	New Delhi,	1969	601–800 th	4	68.76	8
14	King George's Medical University	KGMU	Uttar Pradesh	1911	601–800 th	4	48.91	50
15	Mahatma Gandhi University	MGU	Kottayam, Kerala	1983	601–800 th	4	49.29	49
16	Punjab University	PU	Chandigarh	1882	601–800 th	4	50.24	44
17	Savitribai Phule Pune University	SPPU	Pune	1949	601–800 th	4	58.77	19
18	Thapar University	TU	Punjab	1956	601–800 th	4	48.59	51
19	Aligarh Muslim	AMU	Uttar	1857	801–1000	19	52.54	31

	University		Pradesh		th			
20	Amrita Vishwa Vidyapeetham	AVV	Coimbatore	2003	801–1000th	19	60.74	13
21	Bharathiar University	BU	Coimbatore	1982	801–1000th	19	57.32	21
22	Delhi Technological University	DTU	Delhi	1949	801–1000th	19	46.89	62
23	Guru Jambheshwar University of Science and Technology	GJUST	Haryana	1995	801–1000th	19	-	-
24	Indian Institute of Technology	IIT-B	Bhubaneswar	2018	801–1000th	19	47.96	56
25	Indian Institute of Technology (Indian School of Mines)	IIT-D	Dhanbad	1926	801–1000th	19	56.05	22

Table 3 shows that top 25 Indian institutions in Times Higher Education World University Rankings. In India, only 63 institutes got rank in Times Higher Education World University Rankings 2021. The "Indian Institute of Science" has got highest 301–350th rank from Times Higher Education rankings and 84.18 score from NIRF. The 2nd rank in NIRF followed by "Indian Institute of Technology Ropar" has got 351–400 th rank from THE's and "Jawaharlal Nehru University" has got 68.76 score and received 8th rank in NIRF. It is found that "Banaras Hindu University", "Institute of Chemical Technology", "University of Delhi", "Indian Institute of Science Education and Research, Pune", "Indian Institute of Science Education and Research, Kolkata", "Indian Institute of Technology, Gandhinagar", "Indian Institute of Technology, Hyderabad", "Indraprastha Institute of Information Technology", "Jamia Millia Islamia", "Jawaharlal Nehru University", "King George's Medical University", "Mahatma Gandhi University", "Panjab University", "Savitribai Phule Pune University", and "Thapar University" are secured score between 601 and 800. They have placed the fourth position. It is further found that "Aligarh Muslim University", "Amrita Vishwa Vidyapeetham", "Bharathiar University", "Delhi Technological University", "Guru Jambheshwar University of Science and Technology", "Indian Institute of Technology, Bhubaneswar", "Indian Institute of Technology (Indian School of Mines) Dhanbad" has got 801–1000 th rank and placed the ninetieth position. It is further found that "Indraprastha Institute of Information Technology Delhi", "Guru Jambheshwar

University of Science and Technology” institutions participated in Times Higher Education’s Rankings did not appear in the NIRF 2020.

5.2 Times Higher Education’s ranking on various parameters

Times Higher Education's ranking of top 25 Indian Institutions is presented in table 4 with the parameters such as teaching, research, citations, industry income and international outlook and also the total score of the institute with rankings.

Table 4. Times Higher Education’s Ranking on various parameters

S. No	Name of the Institute	Teaching	R	Research	R	Citations	R	Industry Income	R	International Outlook	R	Score	R
1	IISc	58.1	1	53.1	1	31.9	24	87.6	1	22.1	7	45.6–47.9	1
2	IIT-R	30.3	13	13	19	100	1	35.7	10	19.1	12	43.6–45.5	2
3	IIT-I	36.2	8	23.8	4	70.2	4	35	11	20.4	8	39.8–43.5	3
4	BHU	30.5	12	15	13	53.2	10	33.5	22	18.2	18	30.2–36.3	4
5	ICT-B	37.6	4	26	2	39.7	18	67	4	14.4	23	30.2–36.3	4
6	UD	37.2	5	21.9	5	34.5	22	33.4	24	17.5	19	30.2–36.3	4
7	IISER-P	32.3	10	15.2	11	44.7	14	34.4	17	23	6	30.2–36.3	4
8	IISER-K	28.6	17	14.8	15	64.2	6	36.7	9	18.8	15	30.2–36.3	4
9	IIT-G	26.8	18	13.4	17	66.6	5	40.8	7	25.8	3	30.2–36.3	4
10	IIT-H	29	16	18.6	8	53.9	8	55.1	6	19.1	12	30.2–36.3	4
11	IIIT	22	23	13.8	16	60.2	7	68.9	3	30.6	2	30.2–36.3	4
12	JMI	33	9	9.5	24	52.8	12	34.5	17	24.6	4	30.2–36.3	4
13	JNU	43.5	2	19.7	7	33.1	23	34.8	15	19.3	11	30.2–36.3	4
14	KGMU	26.5	19	10	23	73.5	3	35	11	14.7	22	30.2–36.3	4
15	MGU	40.9	3	24	3	36.8	20	34.9	13	18.9	14	30.2–36.3	4

16	PU	29.1	15	15.2	11	52.9	11	34.7	16	16	20	30.2–36.3	4
17	SPPU	37.1	6	18.6	8	42.7	15	34.9	13	18.5	16	30.2–36.3	4
18	TU	19.2	24	10.6	22	78.4	2	33.8	21	19.5	10	30.2–36.3	4
19	AMU	31.1	11	11	20	41.6	17	38.1	8	24	5	25.1–30.1	19
20	AVV	26	20	18.6	8	38.5	19	74.1	2	41.5	1	25.1–30.1	19
21	BU	36.3	7	15	13	28.7	25	33.5	22	20.2	9	25.1–30.1	19
22	DTU	17	25	13.4	17	53.7	9	34.5	17	14	25	25.1–30.1	19
23	GJUST	29.5	14	8.9	25	41.7	16	33.4	24	14.4	23	25.1–30.1	19
24	IIT-B	22.6	22	10.8	21	45.8	13	34	20	18.4	17	25.1–30.1	19
25	IIT-D	25.8	21	19.8	6	36.2	21	55.2	5	14.8	21	25.1–30.1	19

The five parameters of the ranking system by The Times Higher Education World University rankings are Teaching, Research, Citation, Industry Outcome, and International Outlook. THE's ranking measures as follows: Teaching (30%) + Research (30%) + Citation (30%) + International Outlook (7.5%) + Industry Outcome (2.5%). It is found that "Indian Institute of Science" has received highest 45.6–47.9 score have placed the first rank followed by "Indian Institute of Technology Ropar" has received 43.6–45.5 score have placed the second rank. It is further found that "Aligarh Muslim University", "Amrita Vishwa Vidyapeetham", "Bharathiar University", "Delhi Technological University", "Guru Jambheshwar University of Science and Technology", "Indian Institute of Technology, Bhubaneswar", "Indian Institute of Technology (Indian School of Mines) Dhanbad" has received 25.1–30.1 score have placed the last position.

The first parameter of teaching measures the learning environment. Teaching is divided into five divisions, namely: Reputation survey: 15%, Staff-to-student ratio: 4.5%, Doctorate-to-bachelor's ratio: 2.25%, Doctorates-awarded-to-academic-staff ratio: 6%, Institutional income: 2.25%. In Teaching "Indian Institute of Science" has received the highest 58.1 score and placed the first rank. It is further found that "Delhi Technological University" has received less 17 score have placed the twenty-fifth rank.

The second parameter of Research measures volume, income and reputation. The research has divided into three parts: Reputation survey: 18%, Research income: 6%, Research productivity: 6%. In research, "Indian Institute of Science" has received the highest 53.1 score have placed the first rank. It is further found that "Guru Jambheshwar University of Science and Technology" has received less 8.9 score have placed the last rank.

The Third parameter of Citation measures research influence (citations 30%). The Times Higher Education's ranking is getting bibliometric data from Elsevier Scopus Database. It is found that "Indian Institute of Technology Ropar" has received highest 100 score and "Bharathiar University" has received less 28.7 score from THE's rankings.

The fourth parameter of Industry Outcome measures Innovations, Inventions (Industry Outcome 2.5%). In Industry Outcome "Indian Institute of Science" has received the highest 87.6 score have placed the first rank. It is further found that "Guru Jambheshwar University of Science and Technology", "University of Delhi" has received less 33.4 score have placed the last rank.

The fifth parameter of International Outlook measures Staff, Students, Research. The International Outlook is divided in three parts; Proportion of international students: 2.5%, Proportion of international staff: 2.5%, International collaboration: 2.5%. It is found that "Amrita Vishwa Vidyapeetham, Coimbatore" has received highest 41.5 score and "Delhi Technological University" has received less 14 score from THE's rankings.

5.3 NIRF's ranking on various parameters

The NIRF's ranking on Indian Institutions with Teaching, Research, Graduation output and Outreach and Inclusivity and Perception and rankings are presented in table 5.

Table 5. NIRF's ranking on various parameters

S. No	Name of the Institute	TLR (100)	R	RPC (100)	R	GO (100)	R	OI (100)	R	PERCEPTION (100)	R
1	IISc	82.22	1	92.16	1	82.89	1	52.84	19	100	1
2	IIT-R	69.21	11	31.54	20	63.27	17	60.45	6	20.1	17
3	IIT-I	69.47	10	47.56	7	69.7	12	58.93	8	10	21

4	BHU	70.91	6	44.89	11	85.65	3	58.76	9	42.84	4
5	ICT-B	51.99	21	48.02	6	75.33	18	46.08	22	20.1	18
6	UD	50.18	22	55.4	3	85.21	4	60.37	7	42.06	5
7	IISER-P	69.95	8	45.05	10	59.67	11	60.47	5	29.58	6
8	IISER-K	68.86	13	38.92	15	64.94	13	54.55	18	27.12	11
9	IIT-G	68.47	14	36.5	18	55.42	14	61.46	4	27.68	9
10	IIT-H	69.97	7	48.99	5	66.96	5	58.36	10	46.7	3
11	IIIT		24		24		24		24		24
12	JMI	71.35	4	38.3	17	88.52	6	73.05	2	19.43	19
13	JNU	74.98	3	44.8	12	100	2	75.1	1	53.19	2
14	KGMU	77.94	2	26.47	23	61.22	23	44.84	23	8.71	22
15	MGU	69.15	12	30.32	21	71.21	22	46.6	21	5.53	23
16	PU	50.08	23	42.83	13	71.27	16	54.9	16	26.27	12
17	SPPU	67.66	15	45.48	9	85.36	8	56.22	12	21.41	14
18	TU	56.99	18	38.79	16	65.75	21	55.71	14	11.25	20
19	AMU	70.97	5	40.78	14	55.7	15	57.39	11	21.41	15
20	AVV	69.65	8	52.11	4	73.66	7	65.83	3	29.04	7
21	BU	67.47	16	46.47	8	75.58	9	52.82	20	27.4	10
22	DTU	57.71	17	28.86	22	66.91	20	54.62	17	20.76	16
23	GJUST		24		24		24		24		24
24	IIT-B	56.97	19	36.3	19	59.25	19	55.31	15	25.98	13
25	IIT-D	52.15	20	55.69	2	76.38	10	56.13	13	27.95	8

Table 5 shows that THE's ranking top 25 Indian institutions NIRF score. The NIRF has five parameters: Teaching, Learning & Resources (TLR), Research Productivity, Impact and IPR (RPC), Graduation Outcome (GO), Outreach and Inclusivity (OI), Perception (PR). The NIRF score is measured as follows: $TLR(0.30) + RPII(0.40) + GO(0.05) + OI(0.15) + PR(0.10)$. The parameters of Teaching, Learning & Resources (TLR), Research Productivity, Impact and IPR (RPII), Graduation Outcome (GO), Perception (PR) in "Indian Institute of Science" has received highest (TLR,82.22), (RPC, 92.16), (GO, 82.89), (PR, 100) score have placed the first rank. The parameter of Outreach and Inclusivity (OI) in "Jawaharlal Nehru University" has the highest 75.1 score has placed the first rank. It is further found that "Guru Jambheshwar University of Science and Technology", "Indraprastha Institute of Information Technology Delhi" has received no scores and placed the last rank.

5.4 Comparative analysis of Teaching and Research parameters in THE's and NIRF

The scoring and ranking of THE and NIRF for teaching and research are presented in table 6.

Table 6. Comparative analysis of Teaching and Research in THE's and NIRF

S. No	Name of the Institute	Teaching				Research			
		THE's Score	R	NIRF Score	R	THE's Score	R	NIRF Score	R
1	IISc	58.1	1	82.22	1	53.1	1	92.16	1
2	IIT-R	30.3	13	69.21	11	13	19	31.54	20
3	IIT-I	36.2	8	69.47	10	23.8	4	47.56	7
4	BHU	30.5	12	70.91	6	15	13	44.89	11
5	ICT-B	37.6	4	51.99	21	26	2	48.02	6
6	UD	37.2	5	50.18	22	21.9	5	55.4	3
7	IISER-P	32.3	10	69.95	8	15.2	11	45.05	10
8	IISER-K	28.6	17	68.86	13	14.8	15	38.92	15
9	IIT-G	26.8	18	68.47	14	13.4	17	36.5	18
10	IIT-H	29	16	69.97	7	18.6	8	48.99	5
11	IIIT	22	23	-	24	13.8	16	-	24
12	JMI	33	9	71.35	4	9.5	24	38.3	17
13	JNU	43.5	2	74.98	3	19.7	7	44.8	12
14	KGMU	26.5	19	77.94	2	10	23	26.47	23
15	MGU	40.9	3	69.15	12	24	3	30.32	21
16	PU	29.1	15	50.08	23	15.2	11	42.83	13
17	SPPU	37.1	6	67.66	15	18.6	8	45.48	9
18	TU	19.2	24	56.99	18	10.6	22	38.79	16
19	AMU	31.1	11	70.97	5	11	20	40.78	14
20	AVV	26	20	69.65	8	18.6	8	52.11	4
21	BU	36.3	7	67.47	16	15	13	46.47	8
22	DTU	17	25	57.71	17	13.4	17	28.86	22
23	GJUST	29.5	14	-	24	8.9	25	-	24
24	IIT-B	22.6	22	56.97	19	10.8	21	36.3	19
25	IIT-D	25.8	21	52.15	20	19.8	6	55.69	2

Table 6 indicates that comparative analysis of Teaching and Research parameters in THE's and NIRF score. Teaching in THE's (30%) covers Reputation survey: 15%, Staff-to-

student ratio: 4.5%, Doctorate-to-bachelor's ratio: 2.25%, Doctorates-awarded-to-academic-staff ratio: 6%, Institutional income: 2.25% and NIRF (0.30) covers Student Strength including Doctoral Students(SS): 20, Faculty-student ratio with emphasis on permanent faculty (FSR): 30, Combined metric for Faculty with PhD (or equivalent) and Experience (FQE): 20, Financial Resources and their Utilisation (FRU): 30. It is found that "Indian Institute of Science" has highest 58.1 score received from TEH's and 82.22 score received from NIRF followed by "Jawaharlal Nehru University" has received 43.5 score from THE's and 74.98 score received from NIRF.

In Research, THE's (30%) covers Reputation survey: 18%, Research income: 6%, Research productivity: 6% and NIRF (0.30) (100 marks) cover Combined metric for Publications (PU): 30, combined metric for Quality of Publications (QP): 40, IPR and Patents: Filed, Published, Granted and Licensed (IPR): 15, Footprint of Projects, Professional Practice and Executive Development Programs (FPPP): 15. It is found that "Indian Institute of Science" has highest 53.1 score received from THE's and 92.16 score received from NIRF followed by "Institute of Chemical Technology" has received 26 score from THE's and 48.02 score from NIRF. It is further found that "Indraprastha Institute of Information Technology Delhi" has received 22 score in teaching and 13.8 score in Research from THE's. The "Guru Jambheshwar University of Science and Technology" has received 29.5 score in teaching and 8.9 score in Research from THE's and both institutions do not appear in the NIRF 2020.

5.5 Research Performance of Top 25 THE's ranking Indian institutions in Researchgate

Table 7 is presented with Researchgate's RG score, number of members, number of publications with rankings for the top 25 Indian Institutes.

Table 7. Research Performance of Top 25 THE's ranking Indian institutions in Researchgate

S. No	Name of the Institute	RG Score	%	R	Members	%	R	Pub	%	R
1	IISc	38476.5	15.09	1	7225	11.23	1	49282	18.53	1
2	IIT-R	4687.38	1.84	19	1540	2.39	19	10427	3.92	8
3	IIT-I	6950.33	2.73	15	1514	2.35	20	3352	1.26	20
4	BHU	25524.4	10.01	3	4066	6.32	4	32779	12.33	3
5	ICT-B	7330.34	2.87	13	1922	2.99	14	6256	2.35	12

6	UD	26171.7	10.26	2	5818	9.04	2	37102	13.95	2
7	IISER-P	7431.96	2.91	12	1560	2.42	17	3563	1.34	18
8	IISER-K	6862.17	2.69	17	1544	2.40	18	4238	1.59	17
9	IIT-G	3564.63	1.40	22	1642	2.55	16	1630	0.61	24
10	IIT-H	7807.73	3.06	11	3007	4.67	8	8481	3.19	9
11	IIIT	1619.25	0.64	25	1342	2.09	21	790	0.30	25
12	JMI	10639.4	4.17	8	2354	3.66	12	7591	2.85	10
13	JNU	13820.3	5.42	5	3502	5.44	7	13836	5.20	6
14	KGMU	7916.81	3.10	10	824	1.28	23	6167	2.32	13
15	MGU	2934.92	1.15	23	611	0.95	25	3459	1.30	19
16	PU	13342.9	5.23	6	2007	3.12	13	17416	6.55	4
17	SPPU	9685.85	3.80	9	2973	4.62	9	11431	4.30	7
18	TU	6970.02	2.73	15	2888	4.49	10	4737	1.78	16
19	AMU	17523.5	6.87	4	3898	6.06	5	17412	6.55	4
20	AVV	7099.56	2.78	14	4328	6.72	3	5090	1.91	15
21	BU	5716.49	2.24	18	1189	1.85	22	7588	2.85	10
22	DTU	4512.85	1.77	20	2524	3.92	11	3311	1.25	21
23	GJUST	2920.36	1.15	24	618	0.96	24	2239	0.84	22
24	IIT-B	4228.96	1.66	21	1851	2.88	15	1941	0.73	23
25	IIT-D	11261.6	4.42	7	3616	5.62	6	5783	2.17	14
	Total	254999.74	100		64363	100		265901	100	

Table 7 indicates that research performance of top 25 THE's Indian institutions in researchgate. It is found that "Indian Institute of Science" has the highest 7225 (11.23%) members and published 49282 (18.53%) research publications and received 38476.5 (15.09%) RG Score have placed the first position followed by "University of Delhi" has 5818 (9.04%) members and published 37102 (13.95%) publications and received 26171.7 (10.26%) RG score has placed the second position. It is further found that "Indraprastha Institute of Information Technology Delhi" has 1342 (2.09%) members and published 790 (0.30%) publications and received 1619.25 (0.64%) RG score has placed the twenty-fifth rank.

5.6 Overall Rankings of top 25 Indian Institutions

The overall rankings of all the parameters such as overall rankings, teaching ranking, research ranking along with RG score ranking from THE, NIRF and Researchgate in table 8.

Table 8. Overall rankings of top 25 Indian Institutions

S. No	Name of the Institute	Overall Ranking		Teaching		Research		RG Score Rank
		THE's Rank	NIRF rank	THE Rank	NIRF Rank	THE Rank	NIRF Rank	
1	IISc	1	2	1	1	1	1	1
2	IIT-R	2	39	13	11	19	20	19
3	IIT-I	3	23	8	10	4	7	15
4	BHU	4	10	12	6	13	11	3
5	ICT-B	4	34	4	21	2	6	13
6	UD	4	18	5	22	5	3	2
7	IISER-P	4	25	10	8	11	10	12
8	IISER-K	4	29	17	13	15	15	17
9	IIT-G	4	35	18	14	17	18	22
10	IIT-H	4	17	16	7	8	5	11
11	IIIT	4	-	23	-	16	-	25
12	JMI	4	16	9	4	24	17	8
13	JNU	4	8	2	3	7	12	5
14	KGMU	4	50	19	2	23	23	10
15	MGU	4	49	3	12	3	21	23
16	PU	4	44	15	23	11	13	6
17	SPPU	4	19	6	15	8	9	9
18	TU	4	51	24	18	22	16	15
19	AMU	19	31	11	5	20	14	4
20	AVV	19	13	20	8	8	4	14
21	BU	19	21	7	16	13	8	18
22	DTU	19	62	25	17	17	22	20
23	GJUST	19	-	14	-	25	-	24
24	IIT-B	19	56	22	19	21	19	21
25	IIT-D	19	22	21	20	6	2	7

Table 8 shows that Ranking of top 25 Indian Institutions. It is found that "Indian Institute of Science" got the first position in Times Higher Education rankings and National Institutional

Ranking Framework (NIRF). It is found that "Indraprastha Institute of Information Technology Delhi", "Guru Jambheshwar University of Science and Technology" has not appeared in the NIRF 2020 and received 24th and 25th place in RG score.

6. Conclusion

In the current scenario, Institutional Ranking is playing a major role in academic institutions. The ranking shows their research activities, teaching methods, research productivity, funding, collaboration research to outside the world. In India has only 1667 institutions have participated in Indian Rankings 2020 (NIRF). The study recommends that all academic institutions should participate in the international ranking system. The NIRF system will take part in the participation process at the International level so that it will help to get more participation from India at the international level.

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